AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for transmitting a clock signal through a packet-based network comprising:

a first node configured to measure a clock frequency of the clock signal and configured to calculate an accuracy indicator of the measured clock frequency, the accuracy indicator being a time duration of measurement;

a second node configured to receive the clock frequency measurement and the accuracy indicator of the clock frequency measurement[[,]] and configured to synthesize the clock signal ~~therefrom~~ based on the clock frequency measurement and the accuracy indicator; and

a packet-based network ~~for transmitting~~ to transmit the measured clock frequency and the accuracy indicator from the first node to the second node.

2. (currently amended) A system for transmitting bit synchronous data through a packet-based network comprising:

a first node configured to receive the bit synchronous data for transmission through the packet-based network, the

first node including measurement hardware ~~for generating~~ to generate a clock frequency measurement of the bit synchronous data and an accuracy indicator, the clock frequency measurement and the accuracy indicator to be transmitted through the packet-based network; and[[,]]

a second node configured to receive the clock frequency measurement and accuracy indicator from the first node via the packet-based network, and the second node including signal synthesizer hardware ~~for synthesizing~~ to synthesize a clock signal from the clock frequency measurement and the accuracy indicator ~~for retrieving~~ to retrieve the bit synchronous data,[[;]]

wherein, to generate the clock frequency measurement, the measurement hardware measures a number of counts during a predetermined period of time, and the accuracy indicator is a period of time for measuring the number of counts.

3. (currently amended) A method for adaptive clocking in a packet-based network between a first node and a second node, the method comprising the steps of:

receiving a clock signal for transmission through the packet-based network at the first node;

measuring the clock signal to obtain a frequency measurement at the first node;

determining an accuracy indicator for the ~~measured~~ frequency measurement at the first node, the accuracy indicator being a time duration of measurement;

transmitting the frequency measurement and the accuracy indicator through the packet-based network from the first node to the second node;

receiving the frequency measurement and the accuracy indicator at the second node;

deriving a clock signal from the frequency measurement and the accuracy indicator at the second node; and

transmitting the derived signal from the second node to ~~a~~ user equipment connected to the second node.

4. (currently amended) In a packet-based network with a first transmitting node and a second receiving node, a method of determining a frequency of a transmitting clock at the second receiving node, said method comprising the steps of:

receiving a first plurality of packets;

determining a total time for transmission for each packet;

identifying a first predetermined number of packets in the plurality of received packets that have the shortest

total transmission times, the first predetermined number of packets identified being greater than one; and

deriving the frequency of the transmitting clock by use of the identified first predetermined number of packets.

5. (currently amended) The method of claim 4, wherein the derived frequency is used to maintain buffer fill at the second receiving node.

6. (currently amended) The method of claim 4, additionally comprising the steps of:

identifying the packet in the first plurality of received packets that has the shortest total transmission time;

receiving a second plurality of packets;

determining a total time for transmission for each packet in the second plurality of packets;

identifying a second predetermined number of packets in the second plurality of received packets that have the shortest total transmission times; and

deriving the frequency of the transmitting clock through the identified second predetermined number of packets in the second plurality of packets and the

identified packet with the shortest total transmission time in the first plurality of packets.

7. (new) The system of claim 1, wherein the synthesis includes multiplying the clock frequency measurement by the accuracy indicator.

8. (new) The system of claim 1,

wherein the second node is configured to receive one of a first indicator and a second indicator with the frequency measurement, the first indicator representing a first phase of operation for the second node, and the second indicator representing a second phase of operation for the second node,

wherein, in the second phase of operation, the frequency of the synthesized clock signal is maintained.

9. (new) The system of claim 2, wherein synthesis of the clock signal includes multiplying the clock frequency measurement by the accuracy indicator.

10. (new) The system of claim 2,

wherein the second node is configured to receive a phase of operation indicator from the first node via the

packet-based network, the phase operation indicator being one of a first phase of operation indicator and a second phase of operation indicator,

wherein the second phase of operation indicator indicates that the clock frequency measurement received by the second node from the first node is accurate to a predetermined threshold.

11. (new) The method of claim 3,

wherein said transmitting further includes transmitting a phase indicator through the packet-based network from the first node to the second node,

wherein the phase indicator is one of a first phase indicator and a second phase indicator,

wherein the first phase indicator indicates capturing and recovering of the clock signal, and

wherein the second phase indicator indicates maintaining the clock signal.

12. (new) The method of claim 4, wherein the predetermined number of packets identified is three.

13. (new) The method of claim 6,

wherein the first predetermined number of packets identified is three, and

wherein the second predetermined number of packets identified is three.